

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1-2. (cancelled)

3. (withdrawn) The fuel processor system according to Claim 1 wherein said bypass passage further comprises a check valve to prevent backflow therein.

4-7. (cancelled)

8. (withdrawn) The fuel processor according to Claim 7, further comprising a fuel cell having an anode inlet in fluid communication with said fuel processor outlet and an anode outlet, said bypass valve including an anode bypass valve operably disposed between said fuel processor outlet and said anode inlet for selectively providing fluid communication between said anode inlet and said combustor inlet, thereby bypassing said fuel cell.

9. (withdrawn) The fuel processor according to Claim 8, further comprising a pressure regulator operably disposed between said anode outlet and said combustor inlet.

10. (withdrawn) The fuel processor according to Claim 8, further comprising a pressure regulator operably disposed between said anode bypass valve and said combustor inlet.

11. (withdrawn) The fuel processor according to Claim 8, further comprising a cathode bypass valve operably disposed between a cathode air supply and a cathode inlet of said fuel cell for selectively providing fluid communication between said cathode inlet and combustor inlet, thereby bypassing said fuel cell.

12. (cancelled)

13. (withdrawn) A fuel processing system comprising:

a fuel processor having a fuel processor inlet and a fuel processor outlet;

a fuel cell having an anode inlet in fluid communication with said fuel processor outlet and an anode outlet;

a combustor having a combustor inlet in fluid communication with said anode outlet and a combustor outlet; and

a recirculation loop including a first valve operably disposed between said fuel processor outlet and said anode inlet for selectively providing fluid communication between said fuel processor outlet and said fuel processor inlet.

14. (withdrawn) The fuel processing system according to Claim 13, further comprising a bypass passage providing fluid communication from said recirculation loop to said combustor inlet.

15. (withdrawn) The fuel processing system according to Claim 14, further comprising a second valve to selectively control fluid communication between said recirculation loop and said bypass passage.

16. (withdrawn) The fuel processing system according to Claim 15 wherein said second valve comprises a check valve to prevent backflow from said bypass passage to said recirculation passage.

17. (withdrawn) The fuel processing system according to Claim 15 wherein said first valve and said second valve are operable together to set a recirculation ratio.

18. (withdrawn) The fuel processor system according to Claim 13 further comprising a recirculation valve for controlling fluid communication through said recirculation loop.

19. (withdrawn) The fuel processing system according to Claim 13, further comprising a recirculation pump in fluid communication with said recirculation loop.

20. (withdrawn) The fuel processing system according to claim 19 wherein said recirculation pump is operably disposed between said recirculation loop and said fuel processor inlet.

21. (withdrawn) The fuel processor system according to Claim 19, further comprising a pressure regulator operably disposed between said anode outlet and said combustor inlet.

22. (withdrawn) The fuel processor system according to Claim 13, further comprising a cathode bypass passage having a second valve operably disposed between a cathode air supply and a cathode inlet of said fuel cell for selectively providing fluid communication between said cathode inlet and combustor inlet, thereby bypassing said fuel cell.

23. (withdrawn) The fuel processor system according to Claim 22, further comprising a cathode exhaust in fluid communication with said combustor inlet.

24. (withdrawn) The fuel processor system according to Claim 23, further comprising a check valve operably disposed between said cathode exhaust and said combustor inlet to prevent backflow through said fuel cell.

25. (withdrawn) The fuel processor system according to Claim 13, further comprising a recirculation air supply in fluid communication with said recirculation loop.

26. (withdrawn) The fuel processor system according to Claim 13, wherein said recirculation loop provides fluid communication from said fuel processor outlet through said combustor to said fuel processor inlet.

27. (withdrawn) The fuel processor system according to Claim 13, further comprising a condenser in fluid communication with said fuel processor outlet.

28. (new) A fuel processor system for supplying fuel processor gas to a fuel cell stack comprising:

a fuel processor having a fuel processor inlet and a fuel processor outlet;

a combustor having a combustor inlet and combustor outlet, said combustor inlet in fluid communication with said fuel processor outlet; and

a stack supply flow path for said fuel processor gas from said fuel processor outlet to said fuel cell stack; and

a stack by-pass flow path for said fuel processor gas that by-passes the stack, said stack by-pass flow path including a fuel processor recirculation path from said fuel processor outlet to said fuel processor inlet.

29. (new) The system of Claim 28 wherein said combustor is arranged in said stack by-pass flow path between said fuel processor inlet and said fuel processor outlet, said combustor receiving fuel processor gas from said fuel processor outlet and providing fuel processor gas to said fuel processor inlet.

30. The system of Claim 28, further comprising a by-pass valve for selectively supplying said fuel processor gas to at least one of said stack supply flow path and said stack by-pass flow path.

31. (new) The system of Claim 28 wherein said combustor inlet and said fuel processor inlet are arranged in parallel for receiving fuel processor gas from said fuel processor outlet.

32. (new) The system of Claim 31, further comprising a by-pass valve for selectively supplying said fuel processor gas to at least one of said stack supply flow path and said stack by-pass flow path, and one or more additional valves for selectively supplying said fuel processor gas to at least one of said fuel processor inlet and said combustor inlet.

33. (new) The system of Claim 28, further comprising a check valve upstream of said combustor inlet to prevent backflow from said combustor.

34. (new) The system of Claim 28, further comprising an exhaust valve upstream of said combustor for selectively exhausting said fuel processor gas upstream of said combustor.

35. (new) The system of Claim 28, further comprising an exhaust valve upstream of said combustor for selectively exhausting said fuel processor gas upstream

of said combustor and a by-pass valve for selectively supplying said fuel processor gas to at least one of said stack supply flow path and said stack by-pass flow path; and wherein said exhaust valve and said bypass valve are operable together to set a recirculation ratio.

36. (new) The system of Claim 28 wherein the fuel processor gas is selected from the group consisting of reformat, anode exhaust, cathode exhaust and combinations thereof.

37. (new) A fuel processing system comprising:
a fuel processor having a fuel processor inlet and a fuel processor outlet;
a combustor having a combustor outlet and a combustor inlet in fluid communication with said fuel processor outlet; and
a recirculation loop including:
(a) a first flow path between the fuel processor inlet and the fuel processor outlet;
(b) a second flow path between the fuel processor inlet and the combustor outlet;
(c) at least one valve for selectively providing flow in the first flow path, the second flow path, or both.

38. The system of Claim 37, further comprising a condenser downstream of said fuel processor outlet.